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## COMMON FIRST MID-TERM TEST - 2023

Standard X

Reg No 

SCIENCE

Time : 3.00 hrs

Part - I

Marks : 75

12 x 1 = 12

I. Choose the correct answer:

1. Newton's III law is applicable
  - a) for a body is at rest
  - b) for a body in motion
  - c) both (a) & (b)
  - d) only for bodies with equal masses
2. The unit of 'g' is  $\text{ms}^{-2}$ . It can be also expressed as
  - a)  $\text{cms}^{-1}$
  - b)  $\text{Nkg}^{-1}$
  - c)  $\text{Nm}^2 \text{Kg}^{-1}$
  - d)  $\text{cm}^2 \text{s}^{-2}$
3. The eye defect 'Presbyopia' can be corrected by
  - a) convex lens
  - b) concave lens
  - c) convex mirror
  - d) Bifocal lenses
4. Which of the following has the smallest mass?
  - a)  $6.023 \times 10^{23}$  atoms of He
  - b) 1 atom of He
  - c) 2 g of He
  - d) 1 mole atoms of He
5. In the nucleus of  ${}_{20}\text{Ca}^{40}$  there are
  - a) 20 protons and 40 neutrons
  - b) 20 protons and 20 neutrons
  - c) 20 protons and 40 electrons
  - d) 40 protons and 20 electrons
6. Chemical formula of rust is \_\_\_\_\_
  - a)  $\text{FeO} \cdot x \text{H}_2\text{O}$
  - b)  $\text{FeO}_4 \cdot x \text{H}_2\text{O}$
  - c)  $\text{Fe}_2\text{O}_3 \cdot x \text{H}_2\text{O}$
  - d)  $\text{FeO}$
7. Which is formed during anaerobic respiration?
  - a) carbohydrate
  - b) Ethyl alcohol
  - c) Acetyl CoA
  - d) pyruvate
8. Glycolysis takes place in
  - a) cytoplasm
  - b) chloroplast
  - c) mitochondrial matrix
  - d) stomata
9. In leech locomotion is performed by
  - a) Anterior sucker
  - b) Parapodia
  - c) Setae
  - d) Contraction and relaxation of muscle
10. Root hairs are
  - a) cortical cell
  - b) projection of epidermal cell
  - c) unicellular
  - d) both (b) and (c)
11. Bipolar neurons are found in
  - a) retina of eye
  - b) cerebral cortex
  - c) embryo
  - d) respiratory epithelium
12. 'Heart of heart' is called
  - a) SA node
  - b) AV node
  - c) Purkinje fibres
  - d) Bundle of His

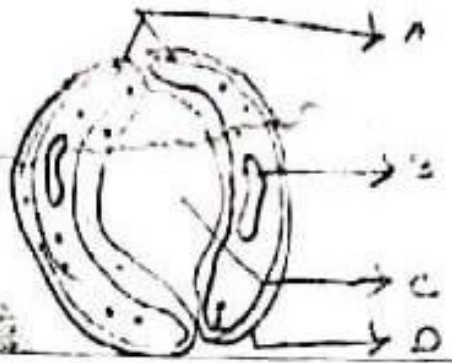
Part - II

II. Answer any 7 questions. (Q.No.22 is compulsory)

7 x 2

13. Define moment of a couple.
14. Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.
15. Define : Atomicity
16. State two conditions necessary for rusting of iron.
17. Write a short notes on mesophyll.
18. Write the dental formula of rabbit.

19. Identify the parts A, B, C and D in the given figure.



20. Match the following :

- |                      |   |                           |
|----------------------|---|---------------------------|
| i) Nissil's granules | - | Forebrain                 |
| ii) Hypothalamus     | - | Peripheral nervous system |
| iii) Cerebellum      | - | Cyton                     |
| iv) Schwann cell     | - | Hindbrain                 |

21. Write the reaction for photosynthesis?

22. Calculate the gram molecular mass of the following : i)  $H_2O$     ii)  $CO_2$

**Part - III**

III. Answer any 7 questions. (Q.No.32 is compulsory)

7 x 4 = 28

23. Differentiate mass and weight.

24. Give the application of universal law of gravitation.

25. Find the percentage of nitrogen in ammonia.

26. How is the ore concentrated by froth floatation process?

27. Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.

28. List out the parasitic adaptations in leech.

29. How are arteries and veins structurally different from one another?

30. Explain the WBC with diagram.

31. With a neat labelled diagram, explain the structure of a neuron.

32. A beam of light passing through a diverging lens of focal length 0.3 m appear to be focused at a distance 0.2 m behind the lens. Find the position of the object.

**Part - IV**

IV. Answer all the questions. (Draw diagrams wherever necessary),

3 x 7 = 21

33. a) State and prove the law of conservation of linear momentum.

(OR)

b) Differentiate the eye defects : Myopia and Hypermetropia

34. a) Derive the relationship between Relative molecular mass and Vapour density.

(OR)

b) Explain the male reproductive system of rabbit with a labelled diagram.

35. a) Differentiate the following :

i) Monocot root and Dicot root

ii) Aerobic and Anaerobic respiration (OR)

b) What is transpiration? Give the importance of transpiration.

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